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Description:	Document Incorporated by Reference. Uniform Test Method for Measuring the Energy Consumption and Energy Efficiency of General Service Lamps that are Not General Service Incandescent Lamps, Compact Fluorescent Lamps, or Integrated LED Lamps.
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AEC_{SD} = annual energy consumption in cooling mode for single-duct portable air conditioners, in kWh/year, calculated in section 5.3 of this appendix.

AEC_{95} and AEC_{83} = annual energy consumption for the two cooling mode test conditions in Table 1 of this appendix for dual-duct portable air conditioners, in kWh/year, calculated in section 5.3 of this appendix.

AEC_T = total annual energy consumption attributed to all modes except cooling, in kWh/year, calculated in section 5.3 of this appendix.

t = number of cooling mode hours per year, 750.

k = 0.001 kWh/Wh conversion factor for watt-hours to kilowatt-hours.

0.2 = weighting factor for the 95 °F dry-bulb outdoor condition test.

0.8 = weighting factor for the 83 °F dry-bulb outdoor condition test.

[81 FR 35265, June 1, 2016, as amended at 81 FR 70923, Oct. 14, 2016]

APPENDIX DD TO SUBPART B OF PART 430—UNIFORM TEST METHOD FOR MEASURING THE ENERGY CONSUMPTION AND ENERGY EFFICIENCY OF GENERAL SERVICE LAMPS THAT ARE NOT GENERAL SERVICE INCANDESCENT LAMPS, COMPACT FLUORESCENT LAMPS, OR INTEGRATED LED LAMPS

NOTE: On or after April 19, 2017, any representations, including certifications of compliance (if required), made with respect to the energy use or efficiency of general service lamps that are not general service incandescent lamps, compact fluorescent lamps, or integrated LED lamps must be made in accordance with the results of testing pursuant to this appendix DD.

1. *Scope:* This appendix DD specifies the test methods required to measure the initial lumen output, input power, lamp efficacy, power factor, and standby mode energy consumption of general service lamps that are not general service incandescent lamps, compact fluorescent lamps, or integrated LED lamps.

2. *Definitions:*

Measured initial input power means the input power to the lamp, measured after the lamp is stabilized and seasoned (if applicable), and expressed in watts (W).

Measured initial lumen output means the lumen output of the lamp, measured after the lamp is stabilized and seasoned (if applicable), and expressed in lumens (lm).

Power factor means the measured initial input power (watts) divided by the product of the input voltage (volts) and the input current (amps) measured at the same time as the initial input power.

3. Active Mode Test Procedures

3.1. Take measurements at full light output.

3.2. Do not use a goniophotometer.

3.3. For single base OLED and non-integrated LED lamps, position a lamp in either the base-up and base-down orientation throughout testing. Test an equal number of lamps in the sample in the base-up and base-down orientations, except that, if the manufacturer restricts the orientation, test all of the units in the sample in the manufacturer-specified orientation. For double base OLED and non-integrated LED lamps, test all units in the horizontal orientation except that, if the manufacturer restricts the orientation, test all of the units in the sample in the manufacturer-specified orientation.

3.4. Operate the lamp at the rated voltage throughout testing. For lamps with multiple rated voltages including 120 volts, operate the lamp at 120 volts. If a lamp is not rated for 120 volts, operate the lamp at the highest rated input voltage. For non-integrated LED lamps, operate the lamp at the manufacturer-declared input voltage and current.

3.5. Operate the lamp at the maximum input power. If multiple modes occur at the same maximum input power (such as variable CCT or CRI), the manufacturer may select any of these modes for testing; however, all measurements must be taken at the same selected mode. The manufacturer must indicate in the test report which mode was selected for testing and include detail such that another laboratory could operate the lamp in the same mode.

3.6. To measure initial lumen output, input power, input voltage, and input current use the test procedures in the table in this section.

TABLE 3.1—REFERENCES TO INDUSTRY STANDARD TEST PROCEDURES

Lamp type	Referenced test procedure
General service incandescent lamps	Appendix R to subpart B of 10 CFR part 430.
Compact fluorescent lamps	Appendix W to subpart B of 10 CFR part 430.
Integrated LED lamps	Appendix BB to subpart B of 10 CFR part 430.
Other incandescent lamps that are not reflector lamps	IES LM–45–15, sections 4–6, and section 7.1.*
Other incandescent lamps that are reflector lamps	IES LM–20–13, sections 4–6, and section 8.*
Other fluorescent lamps	IES LM–9–09–DD, sections 4–6, and section 7.5.*
OLED lamps	IES LM–79–08–DD, sections 1.3 (except 1.3f), 2.0, 3.0, 5.0, 7.0, 8.0, 9.1 and 9.2.*

TABLE 3.1—REFERENCES TO INDUSTRY STANDARD TEST PROCEDURES—Continued

Lamp type	Referenced test procedure
Non-integrated LED lamps	IES LM–79–08–DD, sections 1.3 (except 1.3f), 2.0, 3.0, 5.0, 7.0, 8.0, 9.1 and 9.2.*

* Incorporated by reference, see § 430.3.

3.7. Determine initial lamp efficacy by dividing the measured initial lumen output (lumens) by the measured initial input power (watts).

3.8. Determine power factor by dividing the measured initial input power (watts) by the product of the measured input voltage (volts) and measured input current (amps).

4. Standby Mode Test Procedure

4.1. Measure standby mode power only for lamps that are capable of standby mode operation.

4.2. Maintain lamp orientation as specified in section 3.3 of this appendix.

4.3. Connect the lamp to the manufacturer-specified wireless control network (if applicable) and configure the lamp in standby mode by sending a signal to the lamp instructing it to have zero light output. Lamp must remain connected to the network throughout testing.

4.4. Operate the lamp at the rated voltage throughout testing. For lamps with multiple rated voltages including 120 volts, operate the lamp at 120 volts. If a lamp is not rated for 120 volts, operate the lamp at the highest rated input voltage.

4.5. Stabilize the lamp prior to measurement as specified in section 5 of IEC 62301–DD (incorporated by reference; see § 430.3).

4.6. Measure the standby mode power in watts as specified in section 5 of IEC 62301–DD (incorporated by reference; see § 430.3).

[81 FR 72504, Oct. 20, 2016]

Subpart C—Energy and Water Conservation Standards

§ 430.31 Purpose and scope.

This subpart contains energy conservation standards and water conservation standards (in the case of faucets, showerheads, water closets, and urinals) for classes of covered products that are required to be administered by the Department of Energy pursuant to the Energy Conservation Program for Consumer Products Other Than Automobiles under the Energy Policy and Conservation Act, as amended (42 U.S.C. 6291 *et seq.*).

[63 FR 13317, Mar. 18, 1998, as amended at 78 FR 62993, Oct. 23, 2013]

§ 430.32 Energy and water conservation standards and their compliance dates.

The energy and water (in the case of faucets, showerheads, water closets, and urinals) conservation standards for the covered product classes are:

(a) *Refrigerators/refrigerator-freezers/freezers.* These standards do not apply to refrigerators and refrigerator-freezers with total refrigerated volume exceeding 39 cubic feet (1104 liters) or freezers with total refrigerated volume exceeding 30 cubic feet (850 liters). The energy standards as determined by the equations of the following table(s) shall be rounded off to the nearest kWh per year. If the equation calculation is halfway between the nearest two kWh per year values, the standard shall be rounded up to the higher of these values.

The following standards remain in effect from July 1, 2001 until September 15, 2014:

Product class	Energy standard equations for maximum energy use (kWh/yr)
1. Refrigerators and refrigerator-freezers with manual defrost	8.82AV + 248.4 0.31av + 248.4
2. Refrigerator-freezers—partial automatic defrost	8.82AV + 248.4 0.31av + 248.4
3. Refrigerator-freezers—automatic defrost with top-mounted freezer without through-the-door ice service and all-refrigerator—automatic defrost.	9.80AV + 276.0 0.35av + 276.0
4. Refrigerator-freezers—automatic defrost with side-mounted freezer without through-the-door ice service	4.91AV + 507.5 0.17av + 507.5
5. Refrigerator-freezers—automatic defrost with bottom-mounted freezer without through-the-door ice service.	4.60AV + 459.0 0.16av + 459.0